REMARKS

Claims 51 and 54 have been amended to correct grammatical errors. No new matter has been added.

I. CLAIM OBJECTIONS

Claims 51 and 54 stand objected to. These claims have been amended in accordance with the Examiner's recommendation.

II. CLAIM REJECTIONS UNDER U.S.C. § 112

Claims 1-54 stand rejected under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. According to the Office Action, claims 1-32 and 49-54 allegedly miss the steps of "irradiating a portion of the patient with x-rays from an x-ray source disposed in the rotating gantry and detecting ones of the x-rays transmitted through the portion of the patient body to obtain image data." Also, according to the Office Action, claims 33-48 allegedly miss the element, "an x-ray source disposed in the rotating gantry irradiating a portion of the patient with x-rays and an x-ray detector detecting ones of the x-rays transmitted through the portion of the patient body to obtain image data." However, Applicants respectfully note that the specification does not describe such elements to be essential (See MPEP § 2172.01 - which states that a rejection under § 112 is proper when "a claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record."). Further, as described in paragraph 72 of the specification, a PET procedure may be used in other embodiments, which further evidences that the alleged use of x-ray source is not an essential element. For at least the foregoing reasons, Applicants respectfully request that the § 112 rejection be withdrawn.

III. CLAIM REJECTIONS UNDER U.S.C. § 102

Claims 1-11, 14-27, 30-43, and 46-54 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,269,140 (Takagi). Applicants respectfully note that in order to

sustain a claim rejection under § 102, each of the claimed elements must be disclosed, either expressly or inherently, in the cited reference.

Claims 1, 17, and 33

Claim 1 recites determining a number of intervals N into which a respiratory cycle is to be divided, determining a number of respiratory cycles M to be covered in one gantry rotation, and rotating a gantry to collect at least M x N sets of CT image data of at least a portion of a patient, wherein each set of the CT image data corresponds to a phase of a respiratory cycle. Claims 17 and 33 recite similar limitations. Takagi does not disclose or suggest these limitations. According to the Office Action, column 7, lines 4-20 of Takagi allegedly discloses the above limitations. However, the cited passage of Takagi actually discloses:

> *For example, in order to obtain CT images of a lung, a device for outputting a signal indicating a breath period of the lung is provided in place of the electrocardiograph 50, and the X-ray scan speed in the lung region is controlled synchronously with the breath period of the lung to thereby obtain a clear CT images of the lung without any distortion.* Further, the present invention can be used for examination of an object having an element which is disposed inside the object and which performs periodic and repetitive movement. In that case, the object to be examined is put in the position of the object in FIG. 1 and, for example, a pressure sensor which detects the movement of the moving element and which outputs a detection signal may be used in place of the electrocardiograph 50. If the object is scanned synchronously with the period of the specific phase of the sensor signal, CT images with the moving element standing still at a certain phase can be reconstituted with no distortion.
>
> (Emphasis Added)

As such, the cited passage discloses controlling a x-ray scan speed synchronously with a breath period of the lung to obtain a clear CT image. However, there is nothing in the cited passage (or elsewhere in Takagi for that matter) that discloses or suggests determining a number of intervals N into which a respiratory cycle is to be divided. The cited passage also does not disclose or suggest determining a number of respiratory cycles M to be covered in one gantry rotation, and rotating a gantry to collect at least M x N sets of CT image data of at least a portion of a patient,

as recited in claims 1, 17, and 33. Applicants further note that Takagi does not disclose or suggest that the number of sets of CT image data is equal to M x N, wherein N equals to a number of intervals into which a respiratory cycle is divided, and M is a number of respiratory cycles covered in one gantry rotation. For at least the foregoing reasons, claims 1, 17, and 33, and their respective dependent claims, are believed allowable over Takagi.

Claims 49 and 52

Claim 49 recites determining a number of intervals *N* into which a breathing cycle of the patient is to be divided, and rotating a gantry at least *N* times to acquire image data of at least a part of the patient. Claim 52 recites similar limitations. Takagi does not disclose or suggest these limitations. According to the Office Action, column 7, lines 4-21 and 42-53, and claims 9-11 of Takagi allegedly disclose the above limitations. Applicants respectfully traverse. In particular, the cited passages disclose:

> For example, in order to obtain CT images of a lung, a device for outputting a signal indicating a breath period of the lung is provided in place of the electrocardiograph 50, and the X-ray scan speed in the lung region is controlled synchronously with the breath period of the lung to thereby obtain a clear CT images of the lung without any distortion. Further, the present invention can be used for examination of an object having an element which is disposed inside the object and which performs periodic and repetitive movement. In that case, the object to be examined is put in the position of the object in FIG. 1 and, for example, a pressure sensor which detects the movement of the moving element and which outputs a detection signal may be used in place of the electrocardiograph 50. If the object is scanned synchronously with the period of the specific phase of the sensor signal, CT images with the moving element standing still at a certain phase can be reconstituted with no distortion.
>
> a control unit controlling a rotational speed of said rotational member in accordance with said output signal of said cyclic movement detector so that said x-ray detector collects the scan data necessary for complete reconstruction of a CT image for each slice of said living body within a single cycle of said cyclic movement of the part of said living body, and controlling said slice position changing unit and said driving mechanism to start scanning on different slices of said living body at substantially a same phase

within different cycles of said cyclic movement of said part of said living body.

9. An x-ray computerized tomography method comprising the steps of:
detecting a cyclic movement of a part of a living body to be examined;
irradiating said living body with x-rays from an x-ray source disposed on a rotational member;
rotating said rotational member around said living body;
changing a slice position on said living body;
detecting ones of said x-rays transmitted through said living body to obtain scan data with respect to multiple slices of said living body; and
controlling a rotational speed of said rotational member in accordance with said cyclic movement of a part of said living body so as to collect the scan data necessary for complete reconstruction of a CT image for each slice of said living body within a single cycle of said cyclic movement of the part of said living body, and controlling said slice position and said rotational member to start scanning on different slices of said living body at substantially a same phase within different cycles of said cyclic movement of said part of said living body.

10. A method according to claim 9, further comprising a further step of reconstructing two or three dimensional image of a slice of living body on a basis of the collected scan data with respect to the multiple slices.

11. A method according to claim 10, wherein said controlling step substantially synchronizes a frequency of rotation of said rotational member with a frequency of the detected cyclic movement of said living body.

There is nothing in these cited passages that discloses or suggests determining a number of intervals *N* into which a breathing cycle of the patient is to be divided, and rotating a gantry at least *N* times to acquire image data of at least a part of the patient, as recited in claims 49 and 52. Applicants further note that Takagi does not disclose or suggest that the number of gantry rotation is equal to the number of intervals into which a breathing cycle is to be divided (in fact, there is nothing in Takagi that discloses or suggests dividing a breathing cycle into a number of

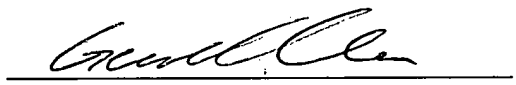
intervals). For at least the foregoing reasons, claims 49 and 52, and their respective dependent claims, are believed allowable over Takagi.

CONCLUSION

Based on the foregoing, all pending claims are believed in condition for allowance. If the Examiner has any questions or comments regarding this amendment, please contact the undersigned at the number listed below.

The Commissioner is authorized to charge any fees due in connection with the filing of this document to Bingham McCutchen's Deposit Account No. **50-2518,** referencing billing number **703143001**. The Commissioner is authorized to credit any overpayment or to charge any underpayment to Bingham McCutchen's Deposit Account No. **50-2518,** referencing billing number **7031432001**.

Respectfully submitted,
Bingham McCutchen LLP

Dated: December 20, 2005 By: 

Gerald Chan
Reg. No. 51,541

Bingham McCutchen LLP
Three Embarcadero Center, Ste. PL2
San Francisco, California 94111-4074
Telephone: (650) 849-4960
Facsimile: (650) 849-4800